MASSAGE

Principles and Technic

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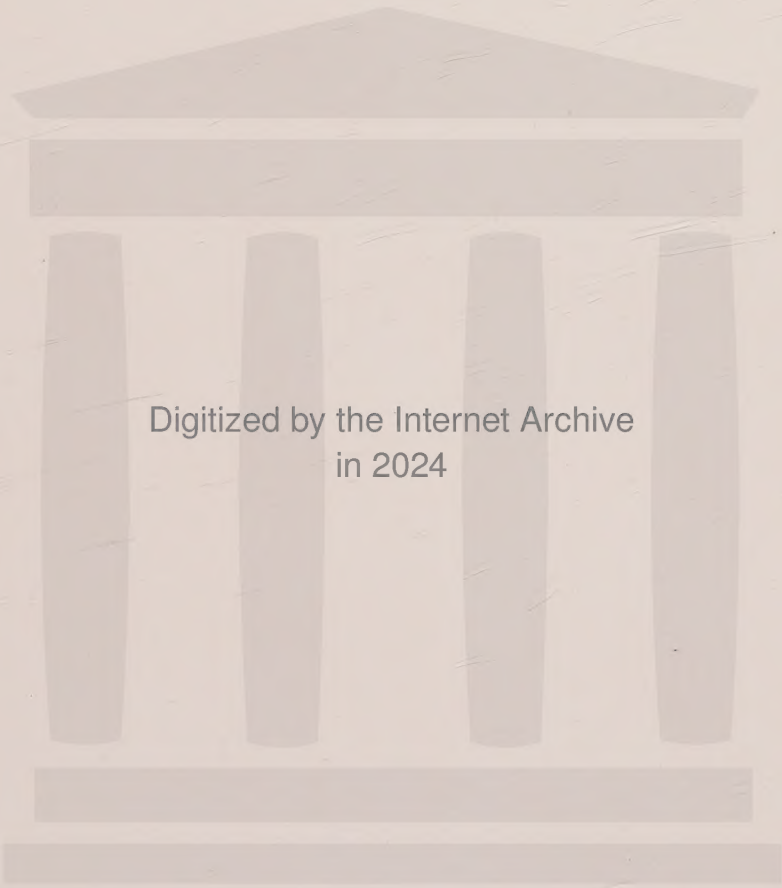

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MASSAGE

ITS PRINCIPLES AND TECHNIC

By

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BERLIN, GERMANY

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EDITOR'S PREFACE

In introducing this work to the American public I desire to make acknowledgment of my obligation to Miss Elizabeth Gould for the excellent translation, and to the publishers for the admirable way in which the book has been printed. The illustrations, upon which the book depends so largely for its value to practitioners unfamiliar with the technic of massage, have been splendidly reproduced.

Charles F. Painter.

Boston, Mass., *May*, 1913.

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EDITOR'S INTRODUCTION

In presenting this American edition of Dr. Böhm's "Treatise on Massage" to such of the English-speaking public as may be interested in the subject a word of introduction seems pertinent. In Germany physical therapeutics in all its forms is employed far more widely than it is here. The beneficial effect of massage is much more fully appreciated than with us, because of its wider application. Reputable institutes abound, and the profession at large feel free to send patients to such places for treatment, because they are assured that benefit will be derived from such a course, and that in such places the technic will be properly performed. In some of our larger cities there are a few hospitals where fairly complete physical therapeutic facilities are to be had, but in very few of them is the value of these facilities appreciated. There also are a few institutions not associated with large hospitals where like advantages may be obtained. The profession at large, however, are not securing for their patients the benefit that they might, because they do not know enough of the advantages inherent in the various therapeutic measures to think of making use of them. What is needed before we can reap the full advantage is a more widely diffused and personal knowledge on such matters, and it is with the hope that the technic of one of the most important of these physical therapeutic measures, which is so clearly demonstrated in this little book of Dr. Böhm's, may be brought within the reach of a great number of the medical profession. It is for this reason that the American edition is being brought out. The aloofness from all things therapeutic which characterizes a considerable portion of the medical profession in this country is regretable. If it can be defended when applied to drugs and compound prescription writing, it cannot longer be defended as applied to massage,

hydrotherapy, and possibly to some forms of thermal therapy. Dr. Böhm's familiarity with the system which Hoffa sanctioned in his clinic, and his admirable illustrations of the application of the principles outlined in the text, puts the essentials of the matter in such form that they may be easily understood and very efficiently practised by any competent physician with very little study. If it is not to be used by the physician himself, the knowledge which he may obtain from it will enable him to intelligently select methods and suggest their application in specific instances.

The book will be found of value to nurses and those who are pursuing courses in medical gymnastics in schools of physical culture.

CHARLES F. PAINTER.

AUTHOR'S INTRODUCTION

In reply to the question, "Who shall do massage, Doctor or Layman?" the medical world is by degrees taking a different standpoint. The brusque statement "Massage by the Doctors," by Hoffa, sounds theoretically very plausible, but in the light of practice gains another aspect. There certainly can be no question but that a great part of massage can be best carried out by the hands of the doctor. To this class belong especially massage administered for pathologic changes in the muscles, tendons, joints, nerves, and internal organs, entirely apart from massage of the female generative organs, the eye, the larynx, etc., which generally should be treated by a suitable specialist. (These last-named forms of massage have not been considered in this volume, belonging, in my opinion, in text-books of special branches).

On the other hand, there is, unquestionably, massage which requires no medical knowledge whatever, but only the essentials of an understanding of anatomy, together with mechanical and manual skill. For instance, this is especially true in general body massage or usual massage of the back, that is, massage which is chiefly administered to relatively sound parts of the body to strengthen them or to improve their circulation. A skilled masseur equipped with a knowledge of anatomy is fully equal to this task.

Moreover, let us see it in practice. The question of "Doctor or Masseur" has long since been decided. Practical reasons have spoken a more important word than theoretic discussion. In most of the orthopedic clinics of Germany (also in America) there exist persons, whether nurses or sisters, or other feminine helpers, to assist the doctors in the province of massage and gymnastics. One could hardly imagine otherwise when, for example, in an orthopedic or surgical clinic perhaps on an average of forty or fifty patients must be treated daily with massage and gymnastics. When there is a case of recent ligament transplantation or congenital hip which has just been taken from the cast, or a retarded joint effusion with danger of

deposit, naturally the doctor, and only the doctor, is competent to give the treatment, but the multitude of cases of back massage or common flat-foot and similar cases he gives with confidence to his assistants.

In clinics for internal diseases as well, the same division is practical. Where special massage treatment for internal abdominal adhesions or similar affections are in question, the doctor only may serve as masseur, but ordinary abdominal massage and general massage treatment can be very well undertaken by a skilled masseur.

We find in practice in most clinics a standpoint of compromise in the question "Doctor or Masseur?" and from this standpoint this book is written. It is intended for the student who desires to assist the doctor in an intelligent manner as assistant in massage and gymnastics, as well as the doctor and the educated masseur. A thorough knowledge of anatomy is absolutely necessary for whomever wishes to devote himself to the practice of massage. Without this it is absolutely impossible to understand the following descriptions of massage technic.

There exists a certain difficulty in treating the inflexible theme of massage technic so that it may be equally understood by physicians and the laity, but I hope to have overcome this difficulty by a choice of germane illustrations in which as much as possible the details are shown.

The technic of the massage described is essentially that which is employed in Hoffa's clinic. If I should succeed in preserving after the death of its author an interest in this easily understood form of massage and extend its practice, the aim of this book would be accomplished.

THE AUTHOR.

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MASSAGE

GENERAL TECHNIC AND PROCEDURE OF MASSAGE

Massage (from the Greek word "to knead") includes all the mechanical procedures which the bare hand can execute for the purpose of curing illness.

PREPARATION OF MASSEUR

Every masseur has to care for his hands as a surgeon does his instruments. Every masseur should avoid touching anything unclean or acid, as in this way there is danger of giving the patient skin disease. The finger-nails of the masseur must be clean, polished, and cut close to avoid scratching. If the masseur is inclined to damp or perspiring hands, he can best overcome this by frequently washing with spirituous liquids, that is, eau de cologne, and powdering with rice-powder. Immediately before the massage the masseur washes with soap and water in the presence of the patient to assure the latter that his hands are clean.

PREPARATION OF THE PATIENT

The part to be massaged must be completely uncovered. The hand of the masseur has to detect all modifications present in the case, which cannot be done through the thinnest of clothing. It was Hoffa's opinion that massage of the body through clothing is quackery. All clothing which compresses the body above the part to be massaged interferes with the circulation. There must be no tight sleeve on the upper arm in the massage of the elbow-joint, no closely fitting drawers or garters, or similar constrictions in the massage of the knee-joint, and the collar must be removed for head massage. In general massage only the part of the body to be massaged is uncovered.

The skin of the part to be massaged must be clean; if necessary wash carefully before the massage. When hair is thick on the part that is treated it sometimes becomes entangled and its roots be-

come inflamed, which causes eruption and interferes with the value of the massage. One should cut off the thick growth of hair with the scissors or sprinkle freely with powder. White vaselin may be used.

THE RELATIVE POSITION OF PATIENT AND MASSEUR

The chief principle for the placing of the patient for massage must be to support the entire length of the part of the body to be massaged, for by following this rule one learns that the patient relaxes the part to be treated, that is, his muscles become soft. This is indispensable, especially for the deep kneading of the muscles. The relative position of the patient and masseur for local massage will be accurately illustrated in the following:

For the massage of the head, front and back of neck, shoulder, and upper arm, place the patient on a stool; in massage of the elbow, forearm, hand, and fingers, these parts must rest on a table. In the treatment of the leg and foot the patient sits opposite the masseur. In massaging the back, abdomen, thigh, or knee-joint the patient is placed on a plinth. This should be padded and covered with oilcloth (1.75 m. long and 45 cm. wide), reaching in height somewhat above the knee of the masseur. This should have an adjustable back and a movable foot-rest.

The masseur's position must be comfortable and not strained. The masseur always places himself beside the patient's bed. He avoids as much as possible frequent and unnecessary changes of position. He must learn to use his left hand as skilfully as his right.

FORCE OF MASSAGE TREATMENT

The idea that "massage must be painful" is old and false. The grasp of the hand must be gentle and sympathetic, yet of sufficient firmness. Only by repeated practice can one judge the right amount of pressure. With new patients and in painful cases one begins lightly, using little force at first and increasing gradually.

LENGTH OF MASSAGE TREATMENT

For a daily treatment of local massage ten to twenty minutes is generally enough; for a general body massage the rule is from one-half to three-quarters of an hour. The time of day for the massage treatment matters only in that of the abdomen, which should not directly follow a heavy meal.

MASSAGE MEDIUM

Generally one uses either powder or ointment for a massage medium, in order to prevent the friction of the hand on the skin of the part massaged. Powder has many advantages over ointment: First, it is conducive to cleanliness; second, it makes very deep kneading possible and improves the masseur's sense of touch. On this account it is better for the masseur who is learning to use powder at first. Generally the preference is given to light, smooth talcum-powder instead of grainy powder, for instance, rice-powder. On a sensitive person one cannot avoid the use of ointment. White American vaselin has earned the preference. One guards this against impurities by keeping it in a closed jar and taking out the required amount for the massage with a wooden stick and not with the fingers. The anointing of the part of the body to be massaged should be done sparingly, as a free use of ointment prevents deep kneading, as well as detracting from the sense of touch. After the massage treatment the massage medium should be carefully removed. Rubbing is sufficient for the removal of powder; ether should be used for the removal of ointment, for if any ointment remains it is apt to cause inflammation of the skin.

THE FUNDAMENTAL MANIPULATIONS OF MASSAGE

The masseur who is learning has to practice the technic of the five following procedures to be able to recognize their effect:

(1) Effleurage (stroking).
(2) Friction.
(3) Pétrissage.
(4) Vibration.
(5) Tapotement (hacking).

For the experienced masseur these manipulations are only the framework, which he fills out after his own judgment by fitting additions, combinations, and changes, according to the organic modifications present in the case.

Effleurage

The following general rules serve for the execution of effleurage:

(1) The stroke begins lightly beyond the part affected, extends over the affected region, finishing in the well part.

(2) The direction of the stroke is "toward the heart."

(3) The pressure applied for the purpose should begin lightly, then increase, and diminish again toward the end of the stroke.

(4) The massaging hand conforms to the part to be treated as broadly and closely as possible. According to the extent of the part treated, one uses either the whole hand or only a part.

So one discriminates:

(*a*) Effleurage with the flat hand for broad surfaces (Fig. 74).

(*b*) Effleurage with ball of thumb (Fig. 56).

(*c*) Knuckle stroking (Fig. 75), when the part to be massaged is covered by a thick fascia (for instance, on the back).

(*d*) Finger-tip stroking (Fig. 80), as in massage of the fingers.

The efficacy of effleurage manifests itself in manifold ways:

In the case of the treated skin it brings about a mechanical removal of the accumulated horny cells, causes increased activity of the sweat-glands, and, finally, an increased blood circulation. One can see and feel the latter, for in effleurage the skin becomes red and warm. All these various kinds of effleurage insure an increased nutrition of the skin. Consequently, effleurage is useful in all atrophied conditions of the skin, for example, after long inactivity of a limb, after inflammatory changes, and also in certain nervous conditions.

Effleurage works on the sensitive nerve-ends in the skin, and, moreover, quiet and gentle effleurage exercises an agreeable pain-soothing influence. Therefore, gentle effleurage can decrease local pain and is advantageous in general nervous affections, as in neurasthenia.

The principal value of effleurage consists in the increase of the blood and lymph circulation in the skin, as well as in the underlying tissues of skin and muscle. A simple experiment shows clearly this effect: Blue streaks quickly appear on an arm that hangs down, caused by stagnation of blood in the veins. A slow, firm effleurage directed toward the heart changes these swollen streaks to the opposite, namely furrows, caused by the emptying of the blood-vessels. That which takes place here visibly in the large blood-vessels we may accomplish by effleurage invisibly in the many small veins and lymphatics which are situated in and beneath the skin, in and between the muscles, and in the network between the tissues. The emptying of these blood-vessels and lymphatics naturally influences the flow of the blood and lymph from those vessels not directly reached by massage. Briefly, the ebb and flow of tissue circulation are increased, and by this the organs are reached, especially the muscles, and are better nourished and strengthened.

When there are deposits and exudations in the tissues, the increased blood circulation through these causes an accelerated removal

of these pathologic products. Herein lies the value of the so-called "preliminary massage."

Effleurage of a limb, according to Hoffa, follows strictly the anatomic point of view. The process of emptying venous blood and lymph from a limb can only be accomplished when the latter is pressed out only from the tissue fabric and small vessels, but first of all from the large vein branches. These lie along the grooves between the individual muscles. Consequently, the effleuraging hand, which conforms closely to the limb, must simultaneously with thumb and finger-tips proceed along these interstices, as we shall later show in detail.

Friction

Friction is usually performed with the tips of the fingers, either with the thumb or with the index- and middle finger. In the case of the knee-joint, friction with the ball of the thumb may be employed.

The part to be massaged is placed upon a solid support. The index- and middle finger of the masseur seek a firm point of support, while the ball of the thumb, held stiffly, seeks to penetrate deeply with little circular movements. The thumb does not slip back and forth on the skin, but moves with it. Occasionally the thumb must serve as the point of support, while the tips of the index- and middle finger make the circular movements. For the most part the thumb and finger-tips friction at the same time, while incidentally both hands introduce the effleurage stroke.

The aim of friction is to limber up hardened tissues of the epidermis, joints, tendons, tendon sheaths, mucous sacs, etc. Further, in disease products, such as exudations, deposits, and thickenings, chiefly to crush, bruise, and reduce these conditions, and to facilitate their solution and wash them away by the lymphatic system.

An experiment by Mosengeil illustrates these effects of friction: If one injects India-ink into both knee-joints of a rabbit and then massages one of the joints, the former will be found free from the ink, which passed into the vessels above it, while the joint not massaged is still filled with ink.

This effect of friction shows its use after inflammation of tendon sheaths, bones, joints, and mucous sacs, scars on the epidermis, dermis, muscles, and so forth. After nerve inflammation friction is of value in reducing swelling and in breaking up adhesions. Light friction is very serviceable in muscular rheumatism.

Pétrissage

Pétrissage serves chiefly for the treatment of the muscles. One should discriminate in pétrissage whether to use one hand, both hands, or "two-finger pétrissage," according to Hoffa.

The first kind of pétrissage is used principally on the large masses of muscles and in the following manner: One places the hand at the origin of the muscle, striving to grasp its entire bulk as far as possible, lifting the muscle from its underlying tissue and pressing it out like a saturated sponge. This procedure is repeated while the hand presses firmly the belly of the muscle and follows its entire course to its insertion. (See Fig. 45.) In order to avoid unnecessary pinching and pain the pressure on the muscle must not be made with the finger-tips, but chiefly with the base of the thumb and index-finger.

Pétrissage is done more frequently with both hands than with one, as follows: The part to be massaged lies crosswise before the masseur. Both hands reach around as much of the muscle as possible and work transversely to the muscle-fibers. As pictured above, both hands move forward and backward in opposite directions, striving to pick up and squeeze out the muscle. (See Fig. 52.)

According to Hoffa, two-finger pétrissage is employed in parts of the body where the muscular fibers spread out so that they cannot be grasped by the entire hand, and particularly where the muscle is covered by heavy fascia and, therefore, also requires knuckle effleurage. The muscle-fibers are grasped by the tip of the thumb, index-, and middle finger, and pressed firmly along with a twisting movement of the skin. (See Fig. 59.)

An increased circulation through the muscles is effected by kneading in a similar but more powerful manner than by friction. Pétrissage is particularly successful in the quick removal of the so-called "fatigue products," waste material is speedily gotten rid of, and the muscle is soon restored to its mechanical power. Moreover, the power of the muscle-fiber is directly stimulated.

The Uses of Pétrissage

(1) In fatigued conditions of muscles. Experience teaches that a muscle tired by continuous labor is restored more quickly by massage, especially pétrissage, than simply by rest.

(2) In atrophy of the muscles, massage and gymnastics are the sovereign remedy for atrophied muscles, whether caused by partial ankylosis, nerve diseases, or joint inflammation.

(3) In muscular rheumatism after the acute stage.

Vibration

Vibration is carried out as follows: The elbow is bent approximately at a right angle, fingers and hands are held stiffly, the finger-tips are placed on the part to be treated, which is shaken by trembling, pressing movements. (See Fig. 89.)

If this technic is employed, especially for nerve vibration, one uses the curved sides of the fingers. The entire hand is used when larger surfaces are vibrated, for example, in the massage of the abdomen. The vibrating hand does not remain on one spot, but occasionally makes distinct moves, as in massage of the stomach. Vibration is as valuable in the treatment of the muscles as of the nerves, because it increases the power of contraction of the muscle-fiber. Long-continued vibration has a quieting and pain-soothing influence on the nerves. Finally, vibration may cause hyperemia in the part of the body treated.

Vibration may be employed to excellent advantage in many nerve disorders, especially in neuralgia and neuritis after the inflammatory stage has passed.

Tapotement

Tapotement is usually done with the side of the little finger (hacking) or with the slightly curved hand (slapping), also with the knuckles or finger-tips. The most usual mode of tapotement is as follows: Both hands are held perpendicular to the length of the member to be treated, the back of the stiffly held finger-tips strike with elasticity and with a short outward turning motion of the forearm. (See Fig. 48.)

The effect of tapotement is valuable in a manner similar to that of vibration.

The results are:

(1) An increased blood supply.

(2) The lessening of nerve irritability.

(3) Increased contraction of muscle-fiber.

One convinces himself of this by noticing how in case of a sudden blow the muscle contracts on the spot struck and the wave of contraction is transmitted through the entire muscle.

Tapotement is highly useful in atrophied conditions of the skin and muscles, as well as in neuralgia and nerve inflammation, being used like vibration after the subsidence of acute inflammation.

Tapotement is also of especial importance in fractures, where it aids materially in healing the ends of the bones.

GYMNASTICS AS AID TO MASSAGE

Only those gymnastic movements which are usually employed in connection with massage will be discussed here. These movements are designated as active and passive. Passive movements are executed upon the relaxed limbs of the patient by the masseur, who holds one hand upon the upper portion of the extended limb, while with the other hand he carefully executes all the movements which are normal in the affected joint many times in succession. These movements are serviceable in rendering stiffened joints movable by stretching shrunken ligaments, capsules, and tendons.

The active movements will be best considered in the form of resistive movements. One hand of the masseur is placed above the joint of the patient, who is requested to execute in succession all the movements which are normal to the joint. Meanwhile the other hand of the masseur gives resistance to these movements. This resistance must be adapted to the strength of muscular contraction. That is, begin lightly, increase, and then increase again toward the end of the movement. The aim of active movements, and especially resistive movements, is the strengthening of the muscles. We rely upon the fact taught by experience that exercise is the best means to strengthen a muscle.

MECHANICAL GYMNASTICS AS AN AID TO MASSAGE

The advance of technic in the past century has resulted in the invention of apparatus to supersede or act as auxiliaries in the performance of massage and gymnastics. The ingenious constructions of Zander must be considered the most important. The Zander machines for doing the active resistive movements, which admit of exact localization and prescribed amount, have served as models for all the later and more or less successful constructions. The problem of substitution of mechanical resistive movements for those given by the human hand has been most successfully solved by Zander by introducing the pendulum apparatus for gymnastics. Krukenberg later succeeded in executing mechanically a modified form of passive movements.

On the other hand, all attempts have failed to execute massage with its characteristic grasp of the hand by mechanical means, except in vibration, which may be done by a vibrator. At the start one must designate an attempt of this sort as injudicious, for only the human hand can touch and feel and accommodate itself to the in-

creasing strength. To give up these advantages would result in a marked decrease in the effect of massage.

The strife once existing as to whether manual or mechanical massage and gymnastics was preferable has long since been settled by the opinion that neither method excludes the other, but supplements it.

COMMON CONTRA-INDICATIONS FOR MASSAGE

As every massage is done on the skin, its healthy condition is an absolute necessity. Injuries, burns, sores, suppurations, and eczema of the skin prohibit massage. Further contra-indications of a common nature are feverish cases of illness, as well as certain other cases, as in epilepsy; also serious diseases of the circulatory system, for example, in advanced arteriosclerosis and blood diseases.

MASSAGE OF THE JOINTS

Contra-indications.—In all acute inflammatory conditions of the joint, massage is prohibited. It might in these cases result in spreading the infection into the common circulation, with an exceedingly harmful and sometimes fatal effect. Acute inflammatory rheumatism and those joint affections which occur after infectious diseases, *e. g.*, scarlet fever, typhoid fever, diphtheria, sepsis, gonorrhea, often cause suppurations in the joints, and massage is prohibited in their acute stages. Massage is also forbidden in tubercular joints.

Indications.—In a great many joint affections massage as described below does most excellent service. Primarily considered are joint injuries, such as sprains and bruises. In both these injuries there is usually an amount of swelling in the joint caused by an effusion of blood which lies partly inside the joint and partly around the capsule. The effusion of blood produces the tension of tissues, pain, and stiffness of the injured joint. Besides stiffness and swelling in sprained and bruised joints, there finally appears a third symptom, that is, atrophy. It is partly a result of the injury and disuse of the injured joint and partly comes as an accession to the injury on a reflex basis. Swelling, stiffness, and atrophy are the three symptoms which massage has to combat in bruises and sprains.

Technic of Joint Massage.—One begins with effleurage, the preliminary massage, which is especially intended to reduce swelling and effusion and relieve the pain; then, following this, friction of the capsule region, increasing according to the decrease of intensity of pain; passive movements are then given. Joint massage is properly done in this manner, which will be illustrated below in its treatment of separate joints. For the treatment of the third above-mentioned symptom, namely, atrophy of the muscle, we combine joint and muscle massage, as described in the following section (page 27). The same massage is employed in dislocations after the splint has been removed.

Finally must be mentioned the results of acute articular rheumatism and also certain forms of chronic articular rheumatism. As

injurious as massage is (see above) in the acute stage of these affections, it is equally as beneficial after the inflammatory stage has passed.

There remain thickenings and deposits in the capsule and surrounding tissues which lead to further swelling in the joint, shrinking the soft parts of the joint which were inflamed, causing stiffness, and finally, by inflammation and non-usage of the joint, atrophy of the muscle follows. Here, again, swelling, stiffness, and muscle atrophy are to be overcome, and here also massage of the joint and muscle is the most excellent remedy. Even though it is so effective, the skilled physician will, in many cases of joint injuries and joint affections mentioned, call to his assistance certain aids (rest and compresses) in curing them that are found in surgical and orthopedic text-books. The masseur must be mindful of these and, for the benefit of the patient, never object to medical attention.

MASSAGE OF THE WRIST

Fig. 1

First of all, one pictures the position of the capsule of the wrist to himself. It extends from the easily felt styloid process (*st*) of the ulna to the metacarpus, about the breadth of three fingers reckoned

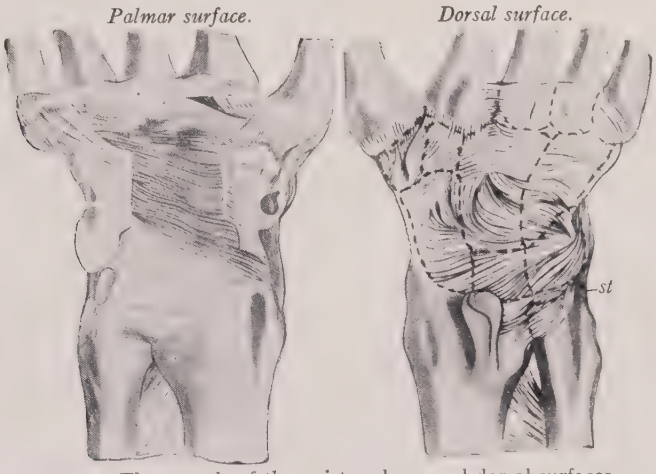

Fig. 1.—The capsule of the wrist, palmar and dorsal surfaces.

by the yard measure. On the back of the wrist the capsule is superficial, just beneath the skin. On the front it is deeply in the wrist, covered by numerous flexor tendons of the hand and fingers.

Fig. 2

The forearm of the patient rests upon a little table in a slightly curved position, held by the masseur. One begins with preliminary massage—*i. e.*, with effleurage of the forearm from the back of the hand to the elbow: *a* shows the beginning; *b*, the finishing position

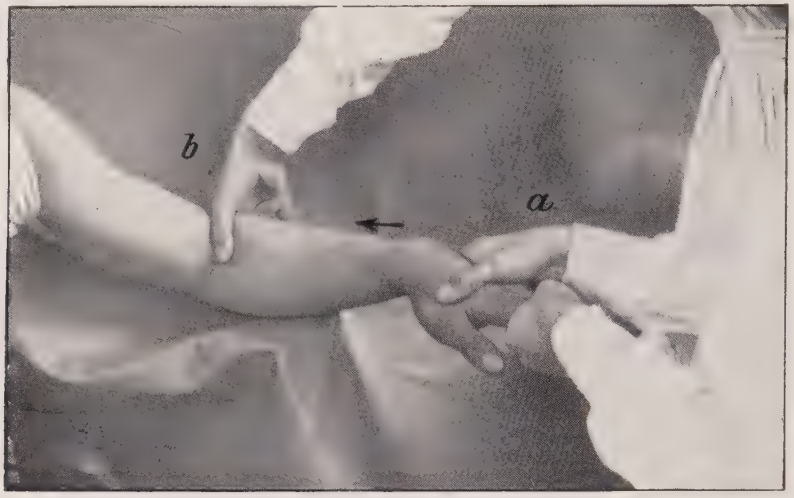

Fig. 2.—Massage of the wrist: Effleurage of the forearm from the back of the hand to the elbow.

of the massaging hand. The effleurage is mostly superficial, which includes the outside as well as the inside of the forearm; consequently the masseur uses both hands freely and interchangeably.

Fig. 3.—Massage of the wrist: Friction over back of patient's hand.

Fig. 3

Friction now follows over the back of the patient's hand, which is relaxed and hangs down in an extended and curved position as much as possible.

Fig. 4

Friction includes also the little finger side of the capsule.

Fig. 4.—Massage of the wrist: Friction of little finger side of capsule.

Fig. 5

Also the thumb side of the capsule is frictioned.

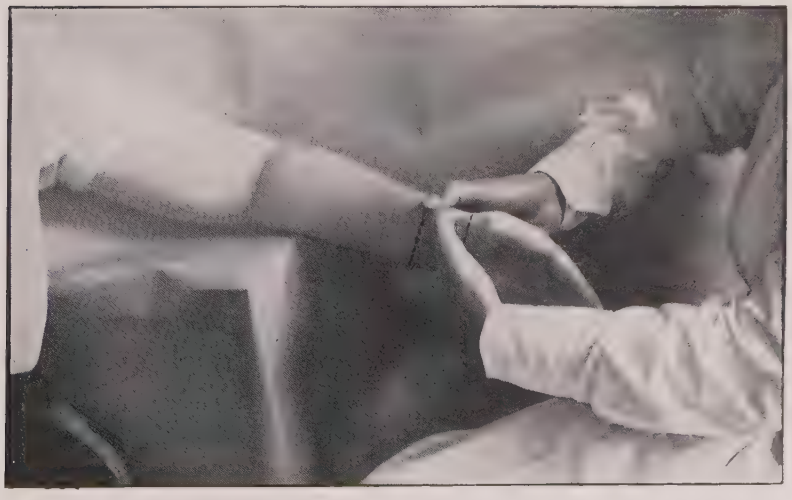

Fig. 5.—Massage of the wrist: Friction of thumb side of capsule.

Fig. 6

Friction of the under side finally follows. In order to reach the capsule at this point the hand must be curved to the maximum and supported against the body of the masseur, so that the tendons of the flexor may entirely relax in order that the masseur may friction in

Fig. 6.—Massage of the wrist: Friction of under side.

between them as much as possible. Here the passive movements of the wrist follow. The following figures illustrate in turn the respective positions of the hand of the patient and the masseur, needing no explanation.

Fig. 7

Passive extension of the wrist.

Fig. 7.—Massage of the wrist: Passive extension.

Fig. 8

Passive flexion of the wrist.

Fig. 8.—Massage of the wrist: Passive flexion.

Fig. 9

Passive adduction of the wrist.

Fig. 9.—Massage of the wrist: Passive adduction

Fig. 10

Passive abduction of the wrist.

Fig. 10.—Massage of the wrist: Passive abduction.

Fig. 11

Passive pronation of the wrist and elbow. The hand of the masseur grasps that of the patient as if in greeting (left hand to left,

Fig. 11.—Massage of the wrist: Passive pronation of wrist and elbow.

right to right). The arms of the patient must be bent to a right angle at the elbow, so that the resistive movements will be performed only in the elbow and wrist and not in the shoulder.

Fig. 12

Passive supination of the wrist and elbow. Here the same position is used as in pronation. The turning movements (Figs. 11 and 12) belong to the wrist-and-elbow massage. In many fractures of

the radius at the wrist it is the limiting of the turning movements particularly which frequently remain as a last symptom. For this

Fig. 12.—Massage of the wrist: Passive supination of wrist and elbow.

reason I wish to refer especially to the passive movements executed in wrist massage.

MASSAGE OF THE ELBOW

Fig. 13

The capsule covers the outside (Fig. 13, *b*), providing a large shield over and under the olecranon (the process which is a continuation of

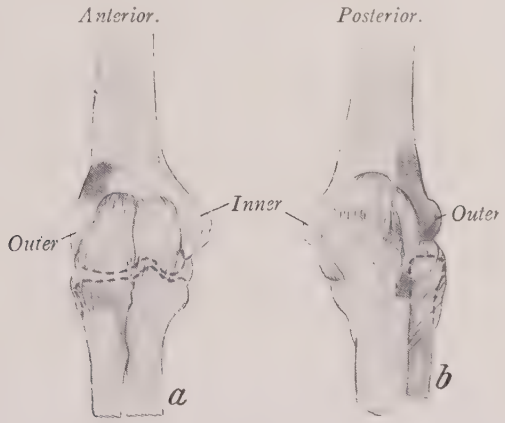

Fig. 13.—The capsule of the elbow.

the elbow-joint), and possesses on the lateral (outside) part a ligament which envelops the joint between the upper arm and the

radius in order that the easily felt head of the radius can rotate outwardly.

On the inside (Fig. 13, *a*) the capsule is attached obliquely stretched over the inner condyle of the upper arm at a height of two finger-breadths, and extends obliquely nearly a finger-length on the under part of the anterior surface of the elbow-joint between the ulna and radius, somewhat deeper in the latter.

Fig. 14

The masseur sits by the side of the patient, the affected arm slightly bent and supported by the hand. For the preliminary massage he begins below the elbow, stroking over and around the elbow-joint and the upper arm up to the region of the shoulder. The masseur

Fig. 14.—Massage of the elbow: First procedure.

penetrates to the capsule by friction. He begins on the back of the elbow-joint and works around the olecranon process from the inner to the outer part of the joint, taking pains to finish in the region above the prominent head of the radius.

Fig. 15

The masseur now places himself directly opposite the patient, who steadies his elbow with the arm flexed and his hand resting against

the chest of the masseur. The latter presses with both thumbs deeply into the elbow-joint on each side of the tendon which bridges

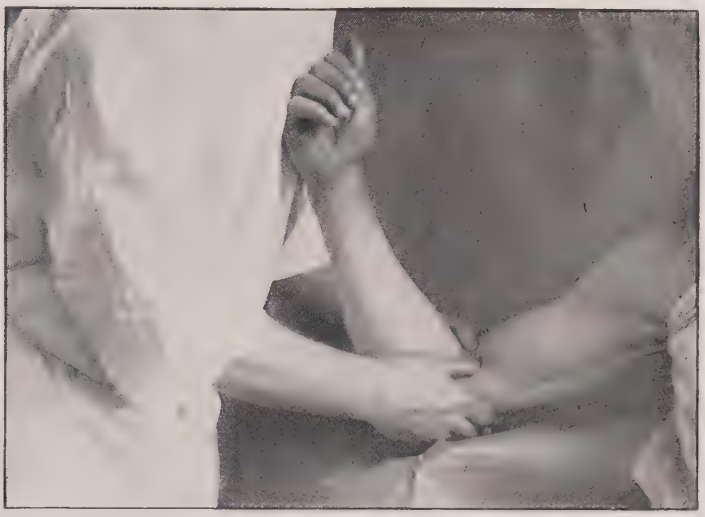

Fig. 15.—Massage of the elbow: Second procedure.

over the joint and frictions the capsular ligament, beginning over the broad part. (See Figs. 13, 17.) Then follow passive movements.

Fig. 16

Passive flexion of the elbow-joint (notice the position of the hand).

Fig. 16.—Passive flexion of the elbow-joint.

Fig. 17

Passive extension of the elbow-joint. In conclusion, rotation is

Fig. 17.—Passive extension of the elbow-joint.

done, as well as pronation and supination, in the manner previously illustrated. (See Figs. 11, 12.)

MASSAGE OF THE SHOULDER-JOINT

Fig. 18

The capsule goes from the neck of the scapula over the head of the humerus, around the back of the latter, including the anatomic neck. This capsular ligament is accessible to massage from all sides, with the exception of the part where there is a bony roof over the shoulder (*d*), including the clavicle and the acromion process of the scapula, making massage at this point impossible. Massage of the capsule: first, from in front (Fig. 19); second, from behind (Fig. 20); third, from underneath (Fig. 21). As before stated, one executes preliminary massage from the front, behind, and over the top of the shoulder, spreading out fan shape toward the body.

Fig. 18.—The capsule of the shoulder-joint.

Friction is performed as follows:

Fig. 19

The patient places the affected arm behind the back, whereby the head of the humerus is pressed up into the front part of the

Fig. 19.—Massage of the shoulder-joint: First procedure.

glenoid cavity. The masseur stands behind the patient, resting his thumbs on the back part of the shoulder, while the fingers of both hands perform the massage.

Fig. 20.—Massage of the shoulder-joint: Second procedure.

Fig. 20

The patient places the hand of his affected arm on his well shoulder. The masseur stands opposite the patient, with his thumbs on the front of the shoulder, while his fingers friction the region around the back of the capsule.

Fig. 21

The patient places the hand of the affected arm on the shoulder of the masseur, who sits opposite him. The latter frictions deeply in the axilla with his thumb until he feels the

Fig. 21.—Massage of the shoulder-joint: Third procedure.

head of the humerus and thus reaches the under part of the capsule. Passive movements are given at the conclusion of the shoulder massage.

The aim is to have active gymnastics follow passive movements, which rule in the treatment of the shoulder has been satisfactorily proved. It is frequently important in the treatment of a stiff shoulder to prevent the movement of the shoulder girdle; this rotation is done by the left hand holding down the right shoulder and vice versa, as follows:

Fig. 22

Passive forward circumduction in the shoulder-joint.

Fig. 22.—Passive forward circumduction in the shoulder-joint.

Fig. 23

Passive backward circumduction in the shoulder-joint.

Fig. 23.—Passive backward circumduction in the shoulder-joint.

Fig. 24

Passive abduction in the shoulder-joint.

Fig. 24.—Passive abduction in the shoulder-joint.

Fig. 25

Passive inward rotation in the shoulder-joint.

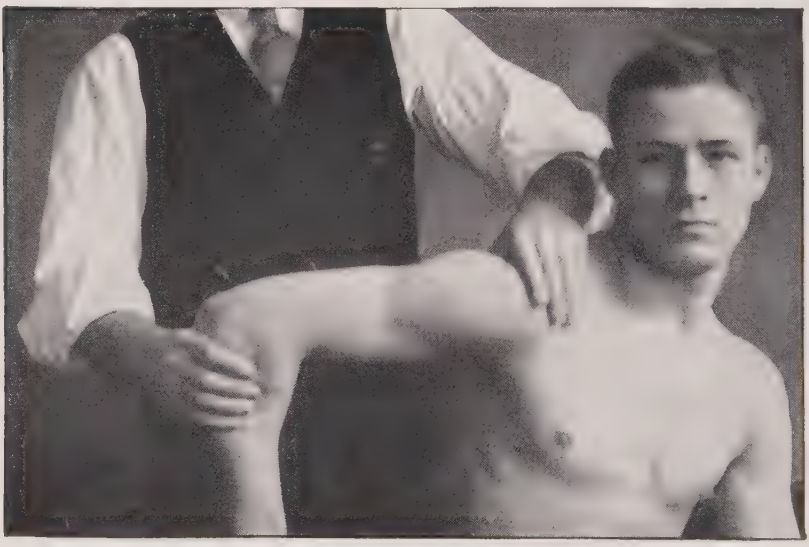

Fig. 25.—Passive inward rotation in the shoulder-joint.

Fig. 26

Passive outward rotation in the shoulder-joint. One may observe in Figs. 25 and 26 the position of the patient's arm. The arm is bent at the elbow to a right angle to prevent rotation taking place in the elbow- and wrist-joint. These two kinds of rotation are

Fig. 26.—Passive outward rotation in the shoulder-joint.

very much restricted in many forms of shoulder stiffness which result from injuries and diseases of the tissues surrounding the joint. If one wishes, circumduction may be added to the passive exercises illustrated.

MASSAGE OF THE ANKLE

Fig. 27

The capsular ligament begins on the tibia and fibula at about the height of the inner malleolus, and by spreading out at the base it partially encloses and is attached to the os calcis.

This capsule can be reached by massage:

(1) On the anterior, where at this point the capsule lies underneath the tendons of the foot and toes for a distance of about three fingers' breadth.

(2) Can be reached also on both sides underneath the malleoli.

(3) The posterior part of the capsule lies under the tendon of

Achilles, so that the massaging finger does not in this case reach the capsule, directly but only by penetrating both sides of this tendon.

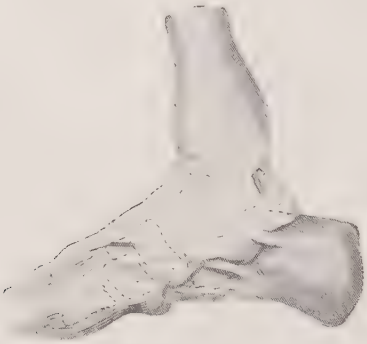

Fig. 27.—The capsule of the ankle.

The preliminary massage begins at the back of the foot or at the heel bone, and ends under the knee in the popliteal space, care being taken of the bony processes. Now follows friction of the capsule.

Fig. 28

In this case, as in the preliminary massage, the foot of the patient rests lightly in the lap of the masseur. The friction begins under the

Fig. 28.—Massage of the ankle.

outer malleolus and continues around to the anterior part of the capsule, ending underneath the inner malleolus. In addition to this there should be friction of the posterior region of the joint on both

sides of the tendon of Achilles, interspersed by repeated stroking toward the calf of the leg. Then follow the passive movements of the ankle-joint, namely:

Fig. 29

Flexion of the ankle-joint.

Fig. 29.—Flexion of the ankle-joint.

Fig. 30

Extension of the ankle-joint.

Fig. 30.—Extension of the ankle-joint.

Fig. 31

Supination of the inner border of the foot. This exercise is especially well adapted to counteract chronic flat-foot.

Fig. 31.—Supination of the inner border of the foot.

Fig. 32

Supination of the outer border of the foot. This is especially useful in case of club-foot.

To the foregoing exercises circumduction may be added if desired.

Fig. 32.—Supination of the outer border of the foot.

MASSAGE OF THE KNEE-JOINTS

Fig. 33

Four parts of the capsule are distinguishable at the knee-joint: an interior, two laterals, and a posterior. At the anterior portion the outstretched capsule envelops the patella, originating above it

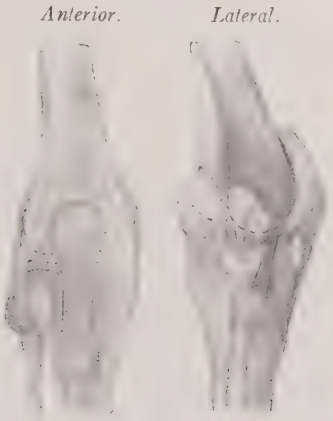

Fig. 33.—Capsule of the knee-joint.

at the distance of about three fingers' breadth, and inserted below at about one finger's breadth on the tibia. The capsule tapers at the sides and continues toward the back, enclosing the condyles, and extending for the breadth of three fingers over the popliteal space.

The preliminary massage begins below the patella and, avoiding the latter, extends up into the groin. The patient lies in a horizontal position.

Fig. 34

Now follows friction of the anterior surface of the capsule around the patella. On account of the wide extent of this surface and also to increase the strength of pressure this is most practically done with the balls of the thumbs. In this case one changes to friction with the fingers on the lateral surfaces of the capsule.

Fig. 35

The massage of the back of the knee capsule requires the patient to lie on the face with the lower leg bent and supported, while the

Fig. 34.—Massage of the knee: Friction of the anterior surface of the capsule around the patella.

Fig. 35.—Massage of the back of the knee capsule.

thumbs press deeply into the knee-joint. Only two passive movements (Figs. 36, 37) need to be noted, and can be carried out without further explanation:

Fig. 36

Passive flexion of the knee-joint (prone position).

Fig. 36.—Passive flexion of the knee-joint.

Fig. 37

Passive extension of the knee-joint (sitting position).

Fig. 37.—Passive extension of the knee-joint.

MASSAGE OF THE HIP-JOINT

The hip-joint is covered on all sides in such a way that massage, as we have up to this time described it for other joints, is not practical for it. On the other hand, passive movements may be employed if chosen in the following manner and succession, with a view to as little change of the patient's position as possible:

Fig. 38

Passive flexion of hip-joint in the supine position (with the knee flexed).

Fig. 38.—Passive flexion of the hip-joint.

Fig. 39.—Passive inward rotation of the hip-joint.

Fig. 39

Passive inward rotation.

Fig. 40

Passive outward rotation.

Fig. 40.—Passive outward rotation at the hip-joint.

Fig. 41

Passive abduction of hip in side position.

Fig. 41.—Passive abduction of the hip in side position.

Fig. 42

Passive hip extension in prone position.

Fig. 42.—Passive hip extension in prone position.

MASSAGE OF THE MUSCLES

In General.—Massage of the muscles is chiefly employed in conditions of atrophy. These are found usually after fixation of joints by bandages and splints which were used necessarily in the treatment of bruises, sprains, dislocations, and fractures, also after injuries and diseases of the joints.

It has already been pointed out above how quickly the muscles situated around a diseased or injured joint become atrophied. It must here again be emphasized that for massage treatment of the joints of this kind a combination of joint massage with muscle massage, now to be described, is absolutely necessary.

Atrophy of muscles follows paralytic lameness and may be successfully remedied by massage. It is also of advantage in simple fatigue of the muscles following too strenuous activity. One may easily convince himself of the benefit of massage after any form of exercise. Finally, massage is proved to be an excellent means for treatment of muscular rheumatism; as in the case of weariness it helps by the removal of fatigue products, so is it here useful in the elimination of deposits which the inflammatory process in the deepest layer of muscles produces, and in later stages in the attempt to overcome the atrophy of muscles which gradually appears. Muscular rheumatism generally affects the lumbar region (lumbago) and the neck and nape of the neck (stiff neck), also the shoulder muscles.

Technic of muscle massage depends definitely upon the anatomic construction. Every member of the body is divided, first of all, into muscular groups, of which every single one is treated. Effleurage constitutes the preliminary muscle massage. The massaging hand should to a certain extent strive to reach around the group of muscles to be treated, while it passes with the thumb along one edge of it and with the four fingers along the other edge, striving to pick up the belly of the muscle. To properly massage the spindle-form muscles the fingers of the massaging hand in this type of effleurage must be near together at the beginning of the stroke, then gradually, with the opening hand spread out more and more, and again, finally, approach each other toward the end of the stroke. Effleurage of a muscle group as here described fills completely the requirements which have been set forth above for effleurage in general; especially the end of the thumbs and sometimes the fingers undertake the part

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of emptying the large lymph-vessels and branches lying in the interstices between the muscles.

The second part of the muscle massage is kneading. This has already in general been thoroughly described. It remains only to be mentioned here that the kneading of a member as well as effleurage must conform to the anatomic structure. Every muscle group of a member is first effleuraged and then kneaded. After these follow tapotement of the member in question in the manner described above (page 23), and, finally, active resistive movements are to be used (page 39). One follows exactly the same directions as in the passive movements of single joints as we have learned in a former section, taking as a basis in general the technical point of view already described (page 24).

The execution of combined muscle and joint massage described above follows in this manner: First the upper part of the muscle lying around the joint is stroked, kneaded, and tapotement given; then the joint region is effleuraged in the manner described, and at the close active and passive movements given.

MASSAGE OF THE MUSCLES OF THE FOREARM

Fig. 43

The muscles of the forearm may, for the purpose of massage, be divided into two groups: flexors and extensors. The flexors (Fig. 43, *a*) lie on the inside and extend from the wrist up to the inner con-

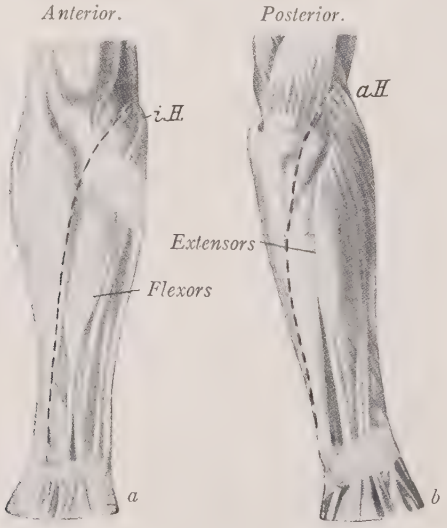

Fig. 43.—The muscles of the forearm.

dyles of the upper arm (Fig. 43, *i. H.*); the extensors lie on the outside and extend from the wrist to the outer condyle of the upper arm (Fig. 43, *a. H.*).

Fig. 44

The patient rests his elbow upon a supporting surface. The hand of the affected forearm, which is halfway between outward and inward rotation, lies in one hand of the masseur, whose other hand is used for massage. The hands are used interchangeably for massag-

Fig. 44.—Massage of the forearm: Effleurage of the flexors.

ing (Figs. 44 and 45). First the flexors are effleuraged. The course of the thumb is to be seen in Fig. 44 (unbroken line), the other four fingers pass along the outside of the dotted line. The thumb and four fingers join above the inner condyle.

Fig. 45.—Massage of the forearm: Kneading the flexors.

Fig. 45

In Fig. 45 one kneads the flexors with one hand.

Fig. 46

The masseur changes hands in order to effleurage the extensors. The thumb and four fingers effleurage the entire length of the fore-

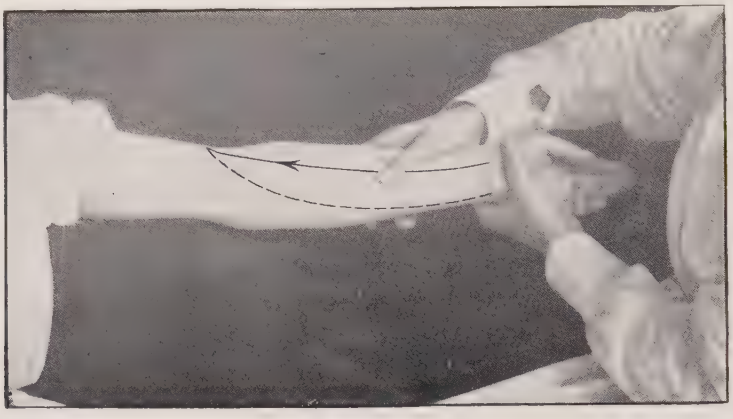

Fig. 46.—Massage of the forearm: Effleurage of the extensors.

arm in the manner illustrated (the thumb on the unbroken lie on the front of the arm, the forefinger on the dotted line on the back of the arm).

Fig. 47

Also the flexor group is kneaded with the same hand.

Fig. 47.—Massage of the forearm: Kneading the flexors.

Fig. 48

The forearm is well supported and fully relaxed for the tapotement, which is given on flexors and extensors of arm. (See Technic, page 23.)

Fig. 48.—Tapotement of the forearm muscles.

Fig. 49

The massage is followed by active resistive movements of the wrist. The direction of these active movements is the same as in the pass-

Fig. 49.—Active resistive movement of the wrist.

ive movements, namely, flexion, extension, abduction, and inward and outward rotation.

One hand of the masseur fixes the patient's forearm, while the other hand gives the resistance against the direction of the motion. The principle of the above technic is always to give resistance to the direction of movement. (See page 24.) Here only active extension is illustrated.

MASSAGE OF THE MUSCLES OF THE UPPER ARM

Fig. 50

The muscles of the upper arm are divided into flexor and extensor groups, the former attached by two heads, called the biceps, and an

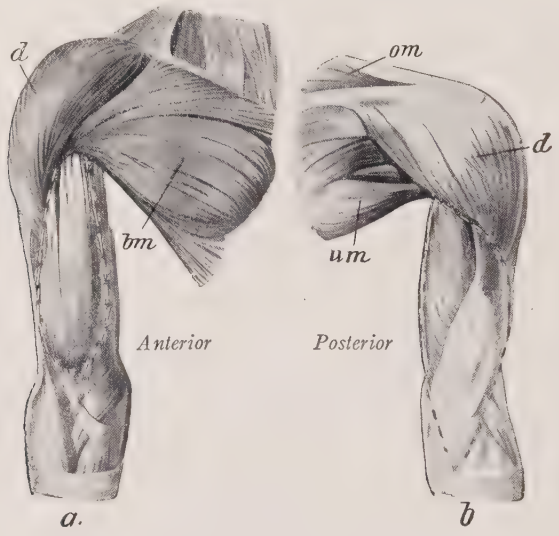

Fig. 50.—The muscles of the upper arm.

inner layer (brachialis); the latter, by three heads in the extensor of the arm (triceps).

Fig. 51

The elbow of the affected arm lies in a slightly bent position, while the forearm is supported by the hand of the masseur.

The massaging hand is placed in the bend of the elbow on the under part of the affected arm, gripping and relaxing the muscle group as marked in Fig. 50. In this the thumb follows one border of the biceps; the four fingers, the other border. The fingers converge at the under part of the big chest muscle (pectoralis major) at the axilla, the origin of this muscle.

Fig. 51.—Massage of the muscles of the upper arm.

Fig. 52

The masseur now assumes a position so that he almost entirely supports the affected arm of the patient, in order to be able to use both hands in kneading the flexor group.

Fig. 52.—Massage of the upper arm: Kneading the flexors.

Fig. 53

The patient sits so that the back of the affected arm is toward the masseur, the arm being slightly flexed and supported. The masseur strokes the extensors in the direction marked in Fig. 50, *b*. The massage hand begins at the back of the elbow-joint, finishing under

the deltoid muscle at the axilla, using the thumb and four fingers as shown in Figs. 50, *b*, and 53.

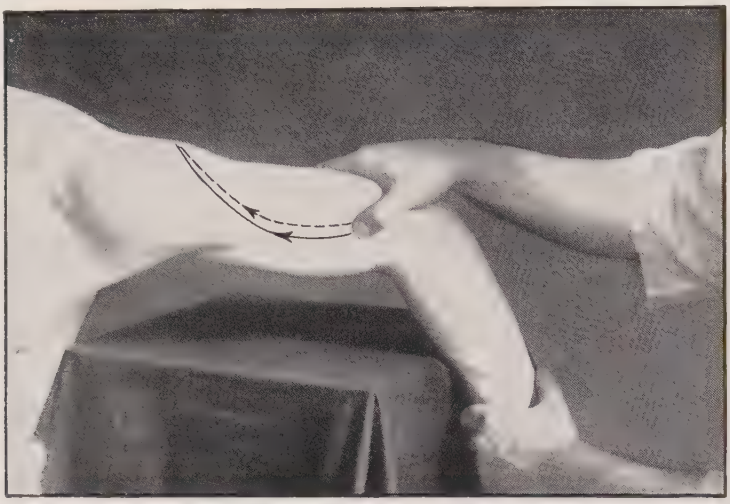

Fig. 53.—Massage of the upper arm: Stroking the extensors.

Fig. 54

The extensors should be kneaded with both hands.
Both flexors and extensors are treated with tapotement.

Fig. 54.—Massage of the upper arm: Kneading the extensors.

Fig. 55

Then follow active resistive movements (Fig. 55): Flexion, extension, and outward and inward rotation. (See Figs. 11, 12, 16, 17.)

Fig. 55.—Active resistive movements of the upper arm muscles.

MASSAGE OF THE MUSCLES OF THE SHOULDER (ANATOMY OF SHOULDER). (See Fig. 50.)

The shoulder muscles are arranged in three groups: (1) The shoulder-blade muscles, which are divided into the supra- and intra-spinatus muscles (Fig. 50, *b*, *om* and *um*).

(2) The pectoral muscles (Fig. 50, *a*, *bm*).

(3) The deltoid muscle (Figs. 50, *a*, *d*, and 50, *b*, *d*).

Fig. 56

One begins with the treatment of the shoulder-blade (scapular) muscles. The masseur stands behind the patient, who is sitting. First of all effleurage is given to those muscles which lie over the scapulæ, principally with the balls of the thumbs.

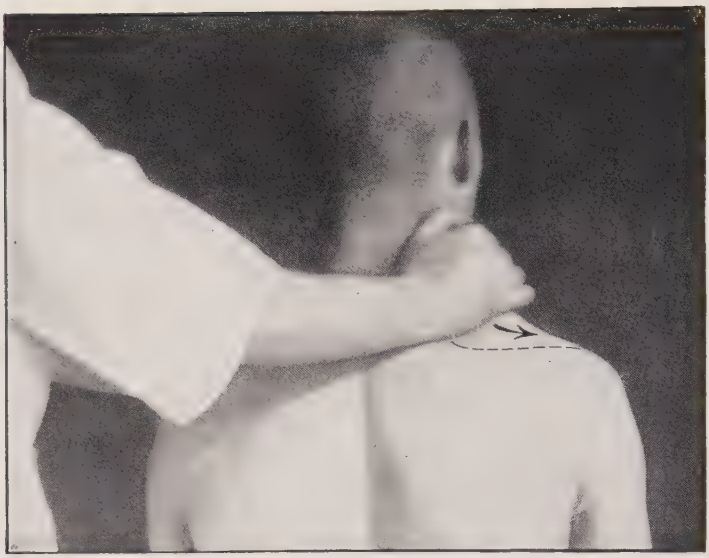

Fig. 56.—Massage of the muscles of the shoulder: Effleurage of the muscles over the scapula.

Fig. 57

The same part is kneaded with both hands in a similar manner.

Fig. 57.—Massage of the muscles of the shoulder: Kneading the muscles over the scapula.

Fig. 58

After this the infraspinatus muscles are effleuraged with the heel of the hand.

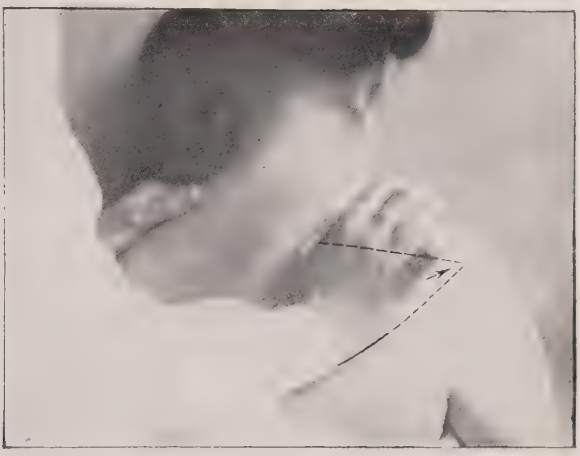

Fig. 58.—Massage of the muscles of the shoulder: Effleurage of the infraspinatus muscles.

Fig. 59

The infraspinatus group should be kneaded with the "two-finger pétrissage," as described (Technic, page 22).

The masseur then goes in front of the patient and treats the pectoral muscles.

Fig. 59.—Massage of the shoulder muscles: Kneading of the infraspinatus muscles.

One effleurage from the clavicle and the sternum, with the heel of the hand converging toward the axilla. (See Fig. 50.) The kneading should be given in the form of two-finger pétrissage. On the female patient care must be taken of the glands in the massage of the breast.

Fig. 60

The deltoid is divided into two parts, the front (Fig. 50, *a*, *d*) and the back (Fig. 50, *b*, *d*). The masseur sits opposite the affected shoulder and takes the two parts of the deltoid separately. He

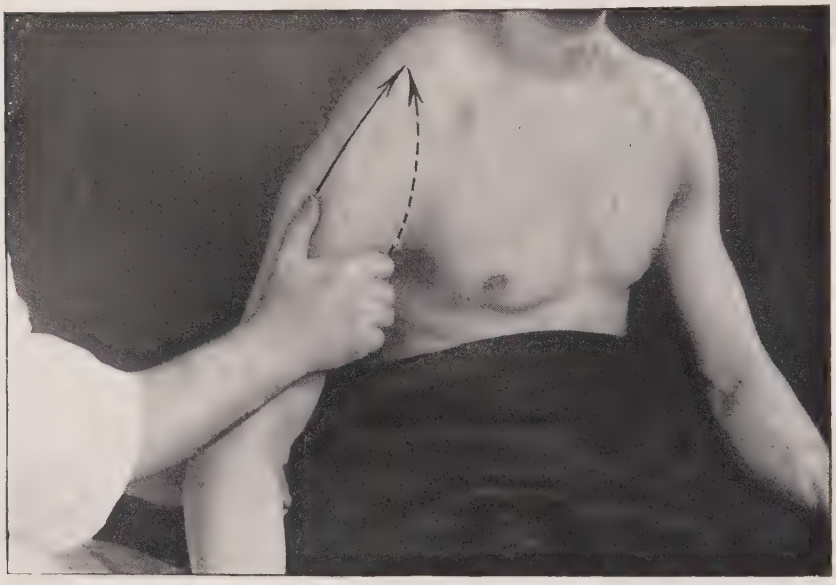

Fig. 60.—Massage of shoulder muscle: Kneading the back part of the deltoid.

uses his hands individually in the following manner: He places himself in a convenient position by the patient's right shoulder. The masseur's right thumb presses upward, following exactly the middle of the deltoid muscle, while the four fingers of the same hand glide over the front border of the muscles, the fingers following around the upper part of the shoulder-joint (the acromion). This part should then be kneaded with both hands in the usual manner.

Fig. 61

The back part of the deltoid muscle (Fig. 50, *b*, *d*) should be effleuraged so that the left thumb should be in the middle and the

four fingers of the left hand go along the outer border, coming together at the top of the shoulder. The kneading of both halves of the muscle should be done in the same direction with both hands.

Fig. 61.—Massage of the shoulder muscles: Effleurage of the back part of the deltoid.

After finishing the effleurage and kneading of the shoulder muscles, work lightly over the bony part with tapotement.

At the conclusion of the shoulder massage and resistive movements are given: forward and backward circumduction, adduction, abduction, and rotation (Figs. 22–26).

MASSAGE OF THE MUSCLES OF THE LOWER LEG

Fig. 62

The following muscle groups of the lower leg are treated separately:

(1) The front group, shin bone (tibialis anticus), lying on the outside of the front of the tibia (Fig. 62, *a*).

(2) The peroneii muscles, lying close behind the fibula and passing behind the outer malleolus (Fig. 62, *b*).

(3) The inner half of the calf muscle with the tibialis posticus and the long flexor of the toes passing behind the inner malleolus (Fig. 62, *b*).

(4) The outer half of the calf muscle (Fig. 62, *b*).

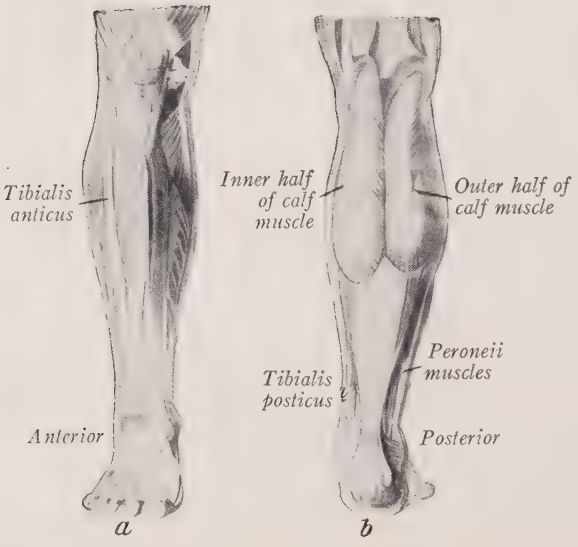

Fig. 62.—The muscles of the lower leg.

Fig. 63

The patient sits opposite the masseur, the heel of the affected leg being supported by the hand, the other hand effleurages the peroneal

Fig. 63.—Massage of the lower leg: Effleurage of the peroneal muscles.

group of muscles upward. The stroke begins close to the ankle-joint and ends just below the knee.

As this group is covered by a strong fascia, the knuckle stroke is employed. In Fig. 63 the beginning and finishing position of the effleuraging hand is illustrated.

Fig. 64

The heel of the affected leg is now placed against the masseur's thigh, who sits somewhat crosswise and kneads with "two-finger pétrissage" the peroneal muscles.

Fig. 64.—Massage of the lower leg: Kneading of the peroneal muscles.

Fig. 65.—Massage of the lower leg: Effleurage of the fibular muscles

Fig. 65

Here the massaging hand held close to the leg effleurages the fibular muscle group, beginning at the upper part of the outer malleolus. This group is further kneaded with both hands in the same way.

Fig. 66

The patient and masseur assume once more the same position as in the beginning; group 3 (see page 64) is effleuraged. The four fingers beginning close to the heel, the thumb passes around to the inside of the leg, where it unites with the fingers at the bend of the

Fig. 66.—Massage of the lower leg: Kneading of the calf muscles.

knee. The muscles massaged may be treated with both hands in a crosswise position to the calf of the leg. The outer half of the calf muscles (group 4) may be treated in the same manner by the other hand. The kneading is also employed on the inner half.

Active resistive movements are carried out in the manner illustrated in Fig. 30: flexion, extension, and raising the inner and outer edge of the foot.

MASSAGE OF THE MUSCLES OF THE THIGH

Fig. 67

The thigh muscles for the purposes of massage are grouped as follows:

(1) Quadriceps (Fig. 67, *a*, *Str*).
(2) Adductors (Fig. 67, *a*, *add*).
(3) Tensor fascia latæ (Fig. 67, *b*, *t*).

(4) Semimembranosus and semitendinosus (Fig. 67, *b*, *i.B*).
(5) Biceps (Fig. 67, *b*, *a.B*).

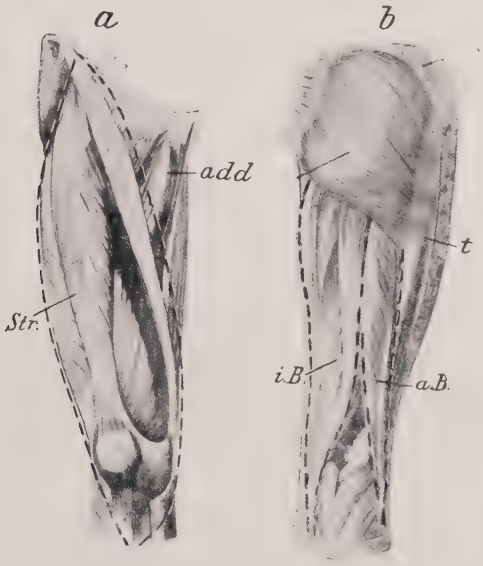

Fig. 67.—The muscles of the thigh.

Fig. 68

The patient lies on the back; the masseur sits by him. The quadriceps extensors are effleuraged in such a manner that the

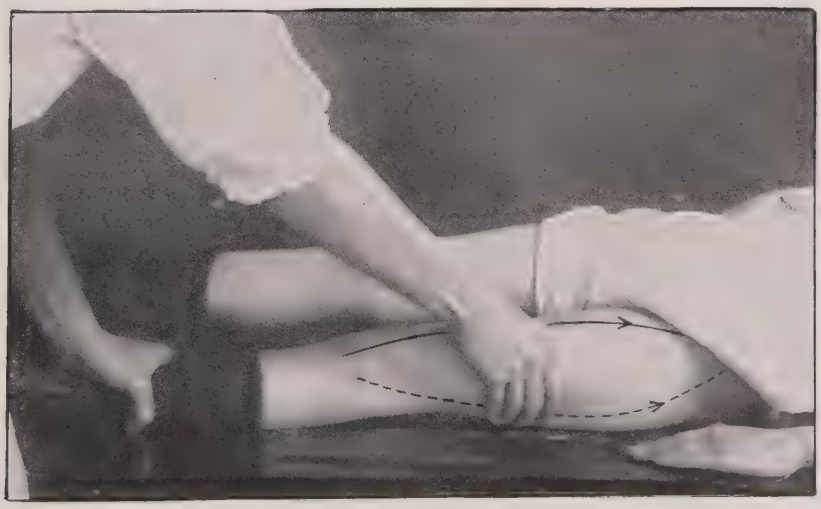

Fig. 68.—Massage of the quadriceps extensor muscles.

massaging hand at first passes over the patella carefully, opens wide, and while the thumb moves along on the side of the quadriceps the four fingers pass along the other border to the insertion of the muscle where the fingers join. (See Fig. 67, *a*, *Str.*)

The quadriceps are now vigorously kneaded with both hands.

Fig. 69

Now the adductors are effleuraged, the thumb of the massaging hand passes along the inner border of the quadriceps, the remaining fingers stretch widely toward the inside of the leg, and the fingers join

Fig. 69.—Effleurage of the adductor muscles of the thigh.

in the hollow of the groin. (See Fig. 67, *a*, *add.*) The kneading with both hands is carried out in the same manner and direction. The front of the thigh is treated with tapotement.

Fig. 70

The patient lies on the well side. The masseur effleurages with the knuckle stroke that portion of the thigh from just above the knee to the crest of the ilium, that is, the group of the tensors of the large thigh muscles. (See Fig. 67, *b*, *t.*) The same parts are treated by "two-finger pétrissage" and tapotement.

Fig. 71

The patient finally lies on the abdomen. The effleurage follows the biceps. The thumb of the massaging hand takes a vertical position, beginning at the popliteal space and passing exactly in the middle

Fig. 70.—Effleurage of the tensors of the large thigh muscles.

of the back of the thigh as far as the fold at the lower part of the buttock. Here the four fingers join the thumb, which at the same time

Fig. 71.—Effleurage of the biceps femoris.

have approached from the head of the fibula on the outside of the thigh to the fold of the buttock. The kneading of this group follows with both hands.

Fig. 72

The masseur now passes to the opposite side of the patient and effleurages the inner group of flexors. The thumb takes the same

course as in the outer group, but the four fingers pass along the inner tuberosity of tibia along the inside of the thigh. The place of union of the thumb and fingers is the fold of the buttock. (See Fig. 67, *b*, *i.B.*) The group is then kneaded with both hands. Tapotement of the back of the thigh finishes the massage.

Fig. 72.—Massage of the semimembranosus and semitendinosus.

The active resistive movements are flexion (still in the prone position) and extension (in the sitting position). (See Figs. 37, 38.)

MASSAGE OF THE BUTTOCK. (See Fig. 67, *b*.)

The gluteal muscles or muscles of the buttock have fibers running in two directions. The larger group of muscles extends from the region of the great trochanter to the crest of the ilium; the smaller group, from the same origin and the sacrum to the oblique lines on the great trochanter. The massage of the gluteal muscles must be adapted to these two groups of muscle-fiber. With the patient in the prone position, both parts are stroked with the hand as well as the flat surface of the end of the thumb. The great trochanter marks the beginning of the stroke, the finish is in the region of the sacrum and the crest of the ilium. Kneading follows in the same direction crosswise to the muscle-fiber and tapotement closes the treatment.

Active hip movements are easily seen in the above-described passive movements. (See Figs. 40–43.)

MASSAGE OF THE MUSCLES OF THE BACK

Fig. 73

The muscles of the back are massaged in three groups:
(1) The longissimus dorsi (Fig. 73, *b*), the long back muscles.
(2) The latissimus dorsi (Fig. 73, *a*, *br.*).
(3) The trapezius (Fig. 73, *a*, *K*).

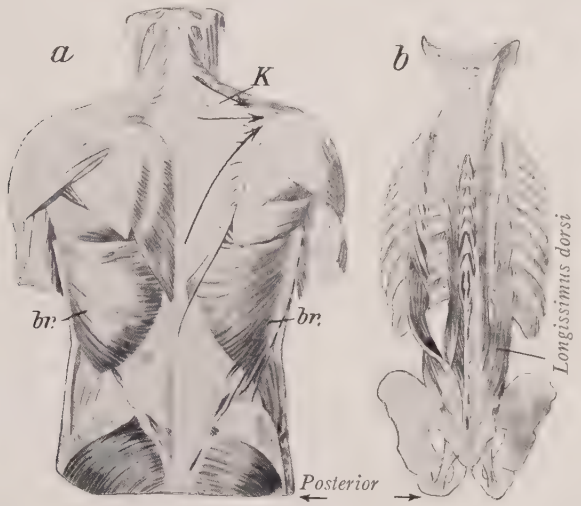

Fig. 73.—The muscles of the back.

Fig. 74.—Effleurage of the back.

Fig. 74

The patient places himself in the prone position. The masseur begins the preliminary massage of the back at the sacrum, stroking upward as far as the supraclavicular fossa with both hands, one on each side of the spine. The masseur crosses his thumbs to avoid the spinal processes. He then proceeds with the same stroke in the opposite direction over the region of the sacrum and crest of the ilium, ending in the curve of the groin.

Fig. 75

Now each half of the back is separately treated. The masseur sits opposite the side to be massaged. (The illustration is of the right

Fig. 75.—Knuckle effleurage of the back.

side.) The long back muscles are treated by knuckle effleurage (*a*, the beginning position of the hand; *b*, the finishing position).

Fig. 76

Two-finger pétrissage of the same muscles follows. The masseur stands crosswise to the patient's back and begins the two-finger pétrissage in the sacral region, with the fingers close to the spinal column, moving perpendicular to it as far as the edge of the long back muscle, returning again to the median line, and combining in this zigzag way the region of the shoulder-blades.

The broad back muscle (latissimus dorsi) is effleuraged in such

a way that the massaging hand follows close to the patient's side, conforming with as flat a surface as possible to the muscle, finishing at the axilla. (See Fig. 73, *br.*) Kneading follows in the form of two-finger pétrissage.

The trapezius (Fig. 73, *a*, *K*) has three directions of fibers: The under muscle-fibers follow an ascending course; the middle, a horizontal course, and the upper arise from the neck and the region back of the head and are inserted into the acromion process. The treatment of the muscles is adapted to this threefold structure. The effleuraging hand proceeds from the median line of the back in the direction indicated in Fig. 73, *a* to the shoulder. The kneading (in the form of two finger pétrissage) conforms to the three directions

Fig. 76.—Two-finger pétrissage of the muscles of the back.

of muscle-fiber. After the masseur has passed to the other side of the patient, the other half of the back is treated in exactly the same way. The back massage is concluded by tapotement of the entire back, taking care to avoid the bones (shoulder-blades and vertebræ).

In rheumatic affections of the back muscles, friction is combined with the above-described massage.

MASSAGE OF THE NAPE OF THE NECK. (See Fig. 73, *a*.)

The muscles to be massaged in the nape of the neck are the upper part of the trapezius and the short muscles lying between the back of the head and the spine, which regulate the movements of the head and neck.

Fig. 77

The trapezius is massaged on both sides at the same time, principally with the balls of the thumbs. (See Fig. 57.)

Fig. 77.—Massage of the trapezius.

Afterward each side is kneaded separately. The muscles of the back of the head (also the mastoid processes) are especially treated with friction, and, finally, by tapotement. The nape of the neck massage is usually employed for rheumatic affections (stiff neck). One often finds in these cases a painful thickening of the muscles on which special friction must be done.

Fig. 78.—Veins of the neck (after Spalteholz).

MASSAGE OF THE THROAT

Fig. 78

Only one group of muscles is considered in throat massage, namely, the sternomastoid group. Close beside it are large blood-vessels, the jugular veins. The aim of throat massage is to stroke these veins. The jugulars carry the venous blood from the head and organs of the neck to the heart. Throat massage is used always in congestion of the head and for the resulting pains in the head.

Fig. 79

The masseur sits facing the patient, whose throat is bared to the chest and the head is bent backward. He places both thumbs at the chin, the tips of the index-fingers near the mastoid processes, and the other three finger-tips on the outer edge of the sternomastoid muscle. The thumbs now glide down on each side of the larynx to the breast bone, while the remaining four fingers pass along the outer edge of the sternomastoid. The hands are flattened as much as possible to the neck, and stroke with an inward turning toward the median line, where the fingers meet. With this grasp of the hand the chief blood-vessels and lymphatics of the throat are reached. The sternomastoid muscle is effleuraged and kneaded by itself from its origin on the mastoid process to the breast bone (sternum).

Fig. 79.—Massage of the neck.

MASSAGE OF THE HAND AND FINGERS

The massage of the hand and fingers is a combination of muscle and joint massage.

Fig. 80.—Stroking each finger.

Fig. 80

One begins by stroking each finger. The outside and the inside are stroked by the finger-tips of the masseur. The stroke begins at the end of the finger and finishes in the middle of the hand.

Fig. 81

The masseur holds the finger to be massaged. On both sides of the finger he kneads the soft parts with his finger-tips. These kneadings are executed first by the finger-tips of the left hand, and then by those of the right hand. One begins at the finger-tips and kneads

Fig. 81.—Kneading of the finger.

the soft part of the end of the finger; then, when the joint between the end and the middle of the finger is reached, it should be frictioned. In the same manner one adapts kneading of the middle and proximal phalanx with friction on the corresponding joints.

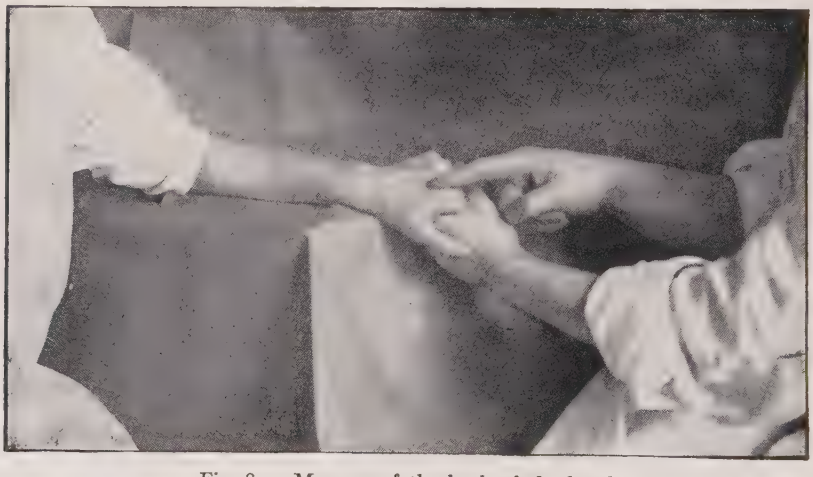

Fig. 82.—Massage of the back of the hand.

Fig. 82

The masseur now begins treatment of the back of the hand. With extended index-finger he frictions the hollows between the knuckles with a saw-like movement.

Fig. 83

The masseur now grasps the middle of the hand in the manner illustrated, pressing the knuckle joints together, thus indirectly causing a kneading of the knuckle muscles. Now follows stroking the palm of the hand in the form of knuckle effleurage and kneading, aided by two-finger pétrissage. The little finger and the ball of the thumb are then separately stroked and kneaded.

Tapotement of the hollow of the hand closes the treatment.

Fig. 83.—Kneading of the knuckle muscles.

The use of active, passive, and resistive movements in the fingers must be regulated by the conditions present in each case. However, the following are noted as the normal movements of the fingers: In the end joint, flexion and extension; the same in the middle joint; in the knuckles, flexion and extension, adduction, and abduction; in the knuckle of the thumb the following movements: adduction and abduction (toward and away from the little finger), and the opposite movements (flexion and extension) in the joint between the two parts of the thumb.

Massage of the foot is almost entirely the same as massage of the hand.

MASSAGE OF THE NERVES AND SKIN

By massage and gymnastics many nerve afflictions are treated to advantage; primarily in the different forms of paralysis. For practical reasons we differentiate sharply between spasmodic (convulsive) paralysis and flaccid paralysis. In the first group, which belong principally to the cerebral (proceeding from the brain), these forms of lameness are more or less curable, the stiffness of the limbs standing in the foreground as signs of the disease. The chief task of massage is combating these attacks.

In cases of these afflictions, in addition to massage of the paralyzed member, specially adapted passive movements are recommended. In case of flaccid paralysis (that is, paralysis proceeding from the spinal cord or peripheral nerves) muscle massage and active movements of the affected limb may be employed chiefly. Only where it is a question of removing, preventing, or arresting contraction of the muscles should suitable passive movements be used.

How much prospect of curing or mitigating paralysis is offered by massage, when it is indicated, and when useless, this decision, of course, requires an exact knowledge of the disease in question.

Although paralysis depends upon an affection of the nervous system, its treatment by massage presents a purely muscle massage, which usually is carried out exactly in the manner described in the foregoing section. Only now and then in the presence of obstinate stiffness may it be combined with passive movements.

On the other hand, there is a direct massage of the nerves in neuritis and neuralgia. In these affections, whose chief symptom is more or less violent pain, there is a question whether it is an inflammation of the nerve itself or its sheath. As long as the inflammation is acute, it is necessary to be very careful in using massage, and at most light friction only is employed. Gradually, with the subsidence of the inflammation, one may change over to typical nerve massage. This consists, first, in regular massage (effleurage, pétrissage, and tapotement) of the limb supplied by the nerve attached. Afterward one may approach the nerve as far as it is accessible, effleuraging it along its course, seeking to reach the places especially painful (point

doloureuse), using friction and vibration. The treatment may be finished by a gentle tapotement of the nerve.

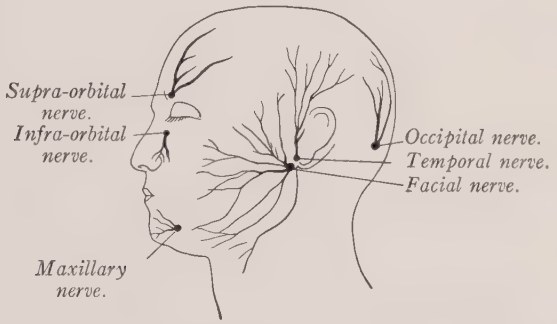

Fig. 84.—Points of emergence of nerves.

In Figs. 84–87 the nerves are indicated which are especially liable to neuralgia, and, therefore, give occasion for massage treatment. The points noted are those which one seeks out, using friction and vibration.

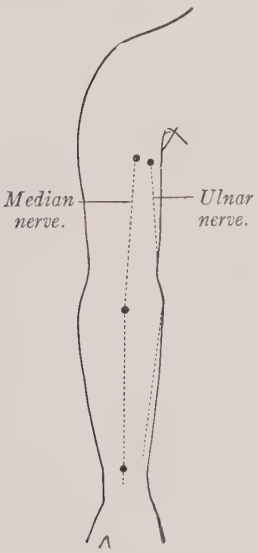

Fig. 85.—Nerves of arm (front).

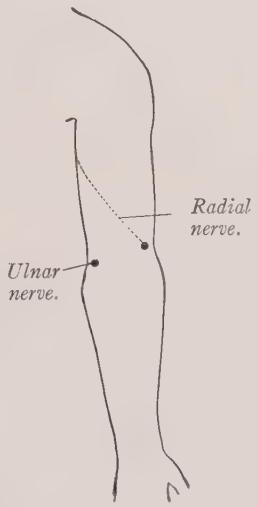

Fig. 86.—Nerves of arm (back).

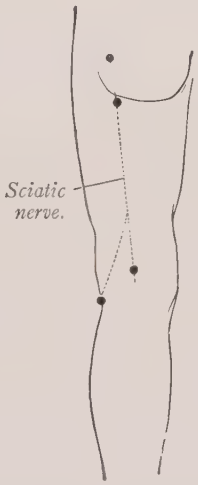

Fig. 87.—Nerves of thigh.

When it is necessary one concludes the treatment of neuralgia and nerve inflammation just described with "bloodless extension." Especially in the case of "sciatica," inflammation of the nerve of the hip, which is frequently treated in this way, and may, therefore,

be cited here as an example for massage in nerve inflammation or neuralgia. Massage is given in the following order: First, regular muscle massage of the lower and upper leg (see page 48); then strok-

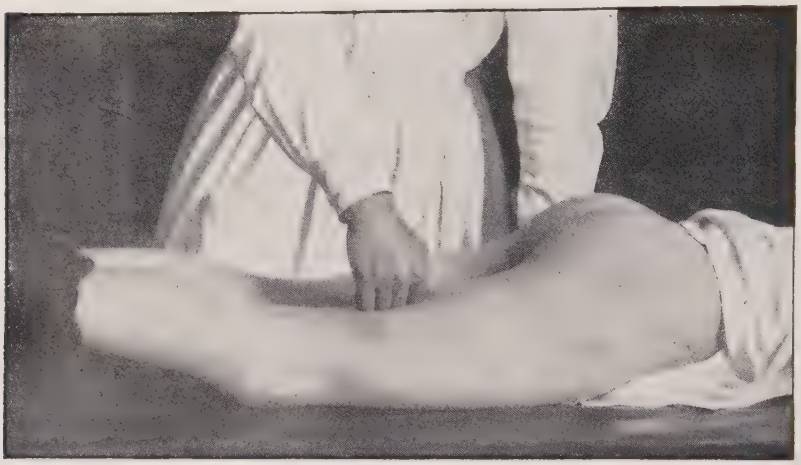

Fig. 88.—Stroking with "knuckles of bent fingers."

ing the nerve according to its course from the bend of the knee to the buttock (Fig. 87); in order to increase the effect the stroking

Fig. 89.—Kneading and vibration.

may be done with the "knuckles of bent fingers" (Fig. 88); further kneading and vibration of all the painful places (Figs. 87, 89). The technic of vibration has been shown above. (See page 8.)

In closing, use "bloodless extension." This is performed by lifting the afflicted leg from the hip with the knee straight. Gradual progress is advised in cases of severe painfulness (Fig. 90).

Fig. 90.—"Bloodless extension."

Concerning massage for neurasthenia, see pages 5 and 72.

Massage of the nerve-ends has recently been systematically built up by Cornelius, and yields fine results in many cases of nervous diseases. A knowledge of it requires special study and does not belong here.

In each massage described up to this time the skin has been treated at the same time. A massage treatment for the skin itself is indicated for swellings, atrophied conditions, and even for scars.

Massage in these cases consists in effleurage and friction. Massage for scars aims especially to loosen the scar tissue from the surrounding tissue, and a demonstrated description and the manipulation of the hand must be adapted to the individual. The main condition for every scar massage is absolute firmness of the scar.

That for every wound, sore, suppuration, etc., skin massage is prohibited has already been shown.

MASSAGE OF THE ABDOMEN

Abdominal massage should be given to overcome chronic constipation. The aim of the treatment is as follows:

(1) To invigorate the abdominal walls.

(2) To mechanically push forward the contents of the small intestine, and especially the accumulation in the large intestine.

(3) The stimulation of peristalsis of the small intestine.

Abdominal massage should not follow a heavy meal. It is better done on an empty stomach about one hour after eating. The bladder should also be empty.

Contra-indications for abdominal massage are: inguinal, femoral, and umbilical hernia, inflammation of the abdominal or the pelvic organs (inflammation of the ovaries, Fallopian tubes, the uterus, bladder, etc.); also stones in the kidney, bladder, or gall-bladder; stomach and intestinal ulcers and the condition of pregnancy.

TECHNIC OF ABDOMINAL MASSAGE

The patient lies with the upper part of the body elevated and the knees slightly bent. In order to assume this position one either uses a massage plinth with adjustable parts (see Fig. 94), or, in a more primitive manner, places a pillow under the knees and upper part of the body. In this way the abdominal walls are relaxed, which is necessary to enable the masseur to work on the abdominal organs. For this reason it is advantageous during the massage for the patient to hold his mouth open and breathe quietly.

The masseur sits at the patient's right and effleurages the abdominal walls around the umbilicus in small circles with the palms of both hands. In this way the first involuntary contraction of the abdominal muscles is overcome. In the same manner the abdominal walls are kneaded with both hands.

Fig. 91

The massage of the large intestine follows. The right hand of the masseur is placed under and against the abdomen to steady it. The finger-tips press carefully into its contents. The stroke starts on the right half of the abdomen on the ascending colon, continuing to the

border of the ribs across the transverse colon, under the border of the ribs on to the left side, following the direction of the descending colon

Fig. 91.—Massage of colon.

and finishing on the left side, following the sigmoid flexure to the rectum.

Fig. 92.—Massage of colon, one hand over the other.

Fig. 92

These manipulations are made very much more efficient by placing one hand over the other (left over right). The finger-tips try to press deeply with an equal amount of pressure along the course of the large colon.

The masseur now frictions over the colon with the finger-tips, describing small circles, following accurately and pressing deeply along the colon in the direction before described.

Friction follows effleurage on the colon, with one hand on top of the other. Repeat again and again.

Fig. 93

One now treats the small intestine. Either one hand or both is placed over the umbilicus and the surrounding parts are shaken and

Fig. 93.—Massage of small intestine.

kneaded. The hand now aims to directly stimulate the intestinal and the muscular walls.

Fig. 94

For tapotement of the abdomen, with both hands cupped, the fingers as well as the thumbs are pressed closely together. The hand striking upon the abdomen drives a column of air before it which increases the effect of the blow (tapotement à air comprimé).

Fig. 94.—Massage of abdomen.

Fig. 95

Tapotement of the abdomen with the knuckles of the doubled up hand.

Fig. 95.—Tapotement with the knuckles.

Fig. 96

The solar plexus (plexus cœliacus) of the sympathetic nervous system lies deeply in the abdominal cavity in the region between the

umbilicus and the ensiform process of the breast bone. The intestinal muscles are supplied with sympathetic nerves from this plexus.

Fig. 96.—Concussion.

Concussion must be added to the abdominal massage as described up to the present time. It is done in this way: The hand is laid flat,

Fig. 97.—Exercise for strengthening the abdominal muscles.

with the fingers cupped, pressing in deeply and vibrating during exhalation.

In a similar manner the sacral plexus (plexus splanchnicus), which is located about midway between the umbilicus and the symphysis, is vibrated.

Fig. 97

After the abdominal massage the masseur may employ some gymnastic exercises for strengthening the abdominal walls. The best one is by assuming the sitting from the lying position with legs fixed.

GENERAL BODY MASSAGE

General massage is used for strengthening weak individuals, for example, in cases of chlorosis or in convalescence, in reducing weight, in neurasthenia, as well as for gout and diabetes. It represents a combination of the massage of all parts as has been shown. It is necessary to spare the patient as much as possible from frequent changes of position.

One proceeds as follows: First, with the patient on the back, massage the front part of the lower limbs; the back part being done with the patient in the prone position. The buttock and back are done in the prone position. Again assuming the position on the back, the upper extremities and neck are treated, closing with abdominal massage.

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